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Analysing the Relationship between Banking Development and Economic Growth: Time Series Evidence from Namibia

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Above all would I wish to give thanks to the heavenly father for this opportunity afforded to me.

Abstract

The main objective of this study is to examine the relationship between banking development and economic growth in Namibia. Namibia has eight licenced commercial banks, four of which have been operational prior to the country's independence; Bank Windhoek Limited, First National Bank Namibia Limited, Nedbank Namibia Limited and Standard Bank Namibia Limited (BON, 2018). The other four licenced commercial banks began operating post-independence. The banking development indicators employed by this study were broad money to nominal GDP (M2), private sector credit to nominal GDP (PSC), and lending interest rates (INTR). The data used in this study is annual data, covering the period 1991 to 2018, engaging the VAR/VECM framework in order to determine the presence of a long-run and short-run association. In addition, this study engaged the Granger causality methodology in order to determine the casual association between banking development and economic growth.

The error correction term equation suggested a long-run relationship between the variables in the VECM, while the results indicated that there are no short run associations amongst the variables. Further, the results of the Granger causality test indicated a bidirectional causality between LNRGDP and LNPSC. In addition, the causality test showed that lags of LNINTR Granger causes LNPSC, which is consistent with the neoclassical theory of interest rate, which pronounces that interest rates are determined by the demand and the supply of loanable funds. Moreover, lags of LNINTR and lags of LNM2 granger causes LNRGDP, which suggest that banking development causes economic growth. The study recommended that the Namibian banks should reform credit policies and decrease the cost of debt in an attempt to avail more credit to the private sector in order to sustain and stimulate economic growth.

Keywords: Banking development, economic growth, granger causality, credit policies, Namibia.

JEL Classification: E5 and G21

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List of Acronyms

ADF	Augmented Dickey Fuller
AR	Autoregressive
ARDL	Autoregressive Distributed Lag
ARMA	Autoregressive Moving Average
BON	Bank of Namibia
DSIBs	Domestic Systemically Important Banks
ECM	Error Correction Model
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIRF	Generalised Impulse Response Function
IMF	International Monetary Fund
INTR	Interest Rate
LM	Lagrange Multiplier
NPC	National Planning Commission of Namibia
PP	Phillips Peron
PSC	Private Sector Credit
RGDP	Real Gross Domestic Product
SURECM	Seemingly Unrelated Regression Error Correction Model
VAR	Vector Autoregression
VECM	Vector Error Correction Model

Chapter 1

Introduction

1.1 Background of the Study

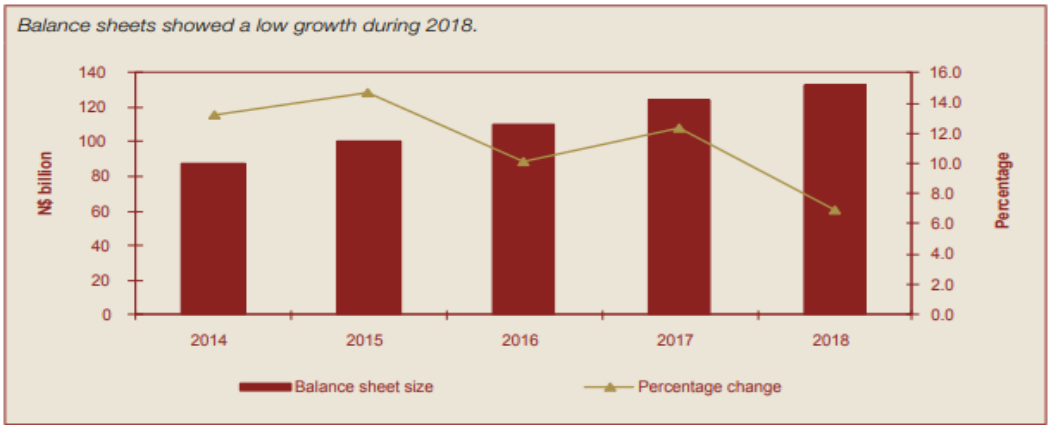
Although, the Namibian economy has grown since independence in 1990, the country has been characterised by slow economic development. The Namibian economy has grown at an average rate of 4.3 per cent, between 1990 and 2016 (Nakale, 2016). More recently, the economy recorded a sluggish growth of 1.0 per cent in 2016, before it shrunk by 0.4 per cent in 2017 (National Planning Commission of Namibia (NPC), 2018). In 2018, Namibia reported a further contraction of 0.1 per cent, (Bank of Namibia (BON), 2019), while the economy has contracted by 1.9 per cent in 2019, (BON, 2020a). It was projected that the economy would experience a further contraction of 7.8 per cent in 2020 (BON, 2020b). The steeper contraction in 2020 is mainly due to the outbreak of the prevailing Covid-19 pandemic, which gave rise to travel restrictions, further dampening economic activity (BON, 2020b). It is evident that the economic growth rate of Namibia is well below the benchmark of 5 per cent required for purposes of attaining the targets set out in the vision 2030 goals (NPC, 2012). Hence, the performance of the Namibian economy gives rise to further examination of factors promoting the country's economic growth.

Nakale (2016) posits that the stimulation of the key drivers of the economy constitutes an approach to addressing the sluggish growth. Furthermore, the tertiary industry is regarded as the biggest driver of the economy, with a contribution of circa, 60 per cent to the Gross Domestic Product (GDP). Within the tertiary industry the financial intermediation sector remains one of the prominent drivers of the economy (Nakale, 2016). The financial sector enables the systematic allocation of resources and intensifies the productivity in an economy, by mobilizing savings and directing funds to the productive sectors. This implies that the financial sector warrants sustainable growth (Bakar & Sulong, 2018). Hence, this study seeks to examine the causality of banking development on economic growth, with an emphasis on commercial banks. Namibia has eight licenced commercial banks, four of which banks have been operational before independence; Bank Windhoek Limited, First National Bank Namibia Limited, Nedbank Namibia Limited and Standard Bank Namibia Limited (BON, 2018). The other four licenced commercial banks began operating post-independence. These four leading

commercial banks are labelled as "*Domestic Systemically Important Banks (DSIBs)*", and hold the main stake of the aggregate asset base within the banking sector (BON, 2018).

According to the Basel III accord, DSIBs are considered to have economically significant torrent effects in event of their failure, which would weaken the whole financial system, with an adverse impact on the real economy (Chen *et al.*, 2014). During 2017 and 2018, the DSIBs held 98.9 per cent of the total banking sector assets. However, the banking sector was faced with an inferior growth in the balance sheet during the 2018 financial period, relative to the growth as depicted by the balance sheet for the 2017 financial period. The sluggish growth was mainly driven by the decline in total credit extended to the private sector, which slowed from 6.6 to 6.1 per cent in 2017/8 (BON, 2018). Figure 1.1 below illustrates the downward trend in the percentage change of the aggregate balance sheet.

Figure 1.1 Aggregated Balance Sheet of the Banking Sector



Source: Bank of Namibia (2019).

The main determinants that gave rise to the growth in bank assets were primarily net loans and advances, short-term negotiable instruments and cash balances. The dominance of the net loans and advances relates to the Theory of Economic Development (Schumpeter, 1934), which proposes that the role of financial intermediaries is essential for modernisation and economic growth. The Theory of Economic Development was proposed by Joseph Schumpeter in his book, *'The Theory of Economic Development'*, highlighting the nexus between financial development and economic growth. Thereafter, the relationship between banking development and economic growth became one of the most debated topics, in an attempt to establish whether the financial sector enhances the course of economic growth.

1.2 Problem Definition and Research Questions

It is a generally acknowledged school of thought within economics that the banking sector promotes economic growth. However, there is no consensus on the direction and strength of the relationship between banking development and economic growth. In recent years, more consideration has been emphasized on the direction of causality between banking development and economic growth (Okello, Kigaba & Kitambal, 2015; Abusharbeh, 2017; Qamruzzaman & Jianguo, 2018). Thus, the causal relationship between banking development and economic growth remain contest (Nyasha & Odhiambo, 2015a). Further, on the direction of causality, empirical research postulates different views, such as the work of Okello *et al.,* (2015) and Abusharbeh (2017) who postulate positive properties of banking development on economic growth. Whereas, Chisunga (2015), who employs the domestic credit to private sector indicator, finds that economic growth causes banking development in Zimbabwe.

Similarly, Sibindi and Bimha (2014), find that economic growth causes banking sector development. Furthermore, Khalifa Al-Yousif (2002), Taivan, (2016) and Taivan (2018) employ panel data analysis and find a strong bi-directional relationship between banking development and economic growth. Moreover, Nyasha and Odhiambo (2015a), suggest that the results provide no evidence of a causal relationship between banking development and economic growth. On the basis of this contestation, Sheefeni (2019) also examines the causal relationship between banking development and economic growth in Namibia and finds that private sector credit and broad money supply granger caused economic growth. Hence, this study investigates the causality of banking development on economic growth in Namibia.

1.3 Research Objectives and Hypotheses

This study's main objective is to examine the relationship between development of the banking sector and economic growth in Namibia through the following sub-objectives:

i. To analyse the long run and short run relationships between banking development and economic growth in Namibia.
ii. To examine the direction of causality between banking development and economic growth in Namibia.

The research hypotheses are:

H_0: *There is causality relationship between banking development to economic growth in Namibia.*

H_1: *There is no causality relationship between banking development and economic growth in Namibia.*

1.4 Scope and Justification of the Study

The 2008 global financial crisis had a sweeping effect on the global community, which instigated a global economic recession. The financial crisis crippled the financial services sector and left a number of firms and banks bankrupt in many countries. As a result of the aftermath of the financial crisis, great importance is placed on extenuating factors for purposes of addressing the inadequacies and distortions of the financial system. Following this principle, developing countries have imposed aggressive reforms to economic and financial structures in an attempt to enhance the productivity of the financial intermediaries with the aim of accomplishing economic growth (Hassan, Sanchez & Yu, 2011). Thus, reiterating the importance of the financial services sector, ensuring sustainable growth, mobilizing savings, facilitating the efficient allocation of resources and increasing overall productivity (Bakar & Sulong, 2018). Hence, banking development is argued to be crucial, even more so within the Namibian context, which has been characterised by slow economic development.

While, extensive research on the relationship between banking development and economic growth exists, there is limited research on banking development and economic growth in Namibia. Therefore this study aims to examine the role that banking plays in the economy and the extent to which banking has influenced economic growth. Given that empirical literature does not lead to a clear consensus on the relationship between banking development and economic growth, this study also aims to determine whether the banking sector follows the supply-leading hypothesis or the demand-following hypothesis. Therefore, this study would inform the DSIBs and the Bank of Namibia on what banking development policies would have to be undertaken in order to encourage growth in the economy and in the banking sector. The policy recommendations are crucial to assist in developing growth strategies for Namibia. The growth strategies are fundamental to the attainment of an economic growth rate of at least 5 per cent, in order to achieve the targets set out per the vision 2030 goals.

1.5 Organization of the Study

This study is organised in five chapters as follows. Chapter 1 sets the tone of the study through a brief discussion on the background of the research topic, introduces the research problem, states the research objectives and hypotheses, and provides the justification of this study. Chapter 2 presents the empirical literature on studies that have focused financial development and economic growth. Chapter 3 describes the methodology and data used for this analysis. Chapter 4 provides an overview of the analysis of the data analysis and presentation of the results. Lastly, Chapter 5 presents a summary of key findings, draws conclusions and makes policy recommendations.

Chapter 2

Literature Review

2.1 Introduction

The literature review is structured into three sections as follows. First, an overview of the banking services sector in Namibia, followed by an analysis of theories that developed on the two variables, then studies that investigate the relationship between banking development and economic growth are discussed. The literature review concludes with a summative evaluation of the studies and theories on banking and economic growth.

2.2 The Overview of the Banking Sector in Namibia

The banking sector in Namibia is dominated by the DSIBs, Bank Windhoek Limited, First National Bank Namibia Limited, Nedbank Namibia Limited and Standard Bank Namibia Limited, therefore the Namibian banking sector is characterized by an oligopolistic market structure (Andongo & Stork, 2006). While the other four licenced commercial banks, that began operating post-independence, play a secondary role.

The DSIBs held an average of 98.9 per cent of the total banking assets during 2018, which remained unaffected relative to 2017. The remaining 1.1 per cent was constituted by other banking institutions and the branch of a foreign banking institution. Further, more than 50 per cent of bank loans are comprised of residential mortgage loans and commercial mortgage loans. This implies that banks are heavily exposed to the housing market and susceptible to housing price corrections (IMF, 2018). Contrary to vulnerability towards the housing market, the DSIBs remain profitable and well-capitalized. The solvency stress tests of the IMF, confirms that the capital adequacy ratios of the four main banks would be above or near the regulatory benchmark of 12 per cent, even in a severely adverse scenario. Nevertheless, the DSIBs are vulnerable to counterparty and portfolio concentration risks (IMF, 2018). In the same light, a significant deterioration in property prices would have opposing effects on bank capital and profitability. The DSIBs' credit growth has exhibited a downward trend to 5 per cent as at 31 December 2017, being the lowest position since the global financial crisis. This decline in credit growth is expected to have adverse effects on economic growth and asset quality (IMF, 2018).

2.2.1 Performance of the Banking Sector

The banking sector faced inferior growth in their balance sheet during the 2018 financial period, relative to the growth in their balance sheet for 2017 (BON, 2018). The aggregate growth on the balance sheet of the banking sector exhibits growth from N$123.7 billion as at the end of 2017 to N$132.2 billion as at 31 December 2018. The main determinants of the growth in assets were comprised of net loans and advances, short-term negotiable instruments and cash and balances. Whereas, net loans and advances exhibit growth of N$5.1 billion from N$90.3 billion in 2017 to N$95.4 billion in 2018. Similarly, the short-term negotiable instruments proliferated with N$3.6 billion from N$11.8 billion during 2017 to N$15.4 billion in 2018. Whereas, the cash and balances followed the same trend with an increase of N$305.4 million, from N$12.0 billion in 2017 to N$12.3 billion in 2018 (BON, 2019).

The composition of the assets as at 31 December 2018, remains consistent, relative to the position as at 31 December 2017. The asset base in 2018 is mainly comprised of net loans and advances, which represent 72.1 per cent of the asset base of the aggregated balance sheet of the banking sector. In comparison, short-term negotiable instruments and cash and balances had a subdued position of 11.7 per cent and 9.3 per cent of the asset base of the banking sector, respectively (BON, 2019). Further, the leading portion of the banking sector loan book is comprised of residential mortgages, which made up 39.2 per cent of the total loan book and stood at N$37.2 billion as at the end of 2018. Followed by term loans, which constitute 15.6 per cent or N$14.1 billion of the total loan book and commercial real estate, which constitute 12.8 per cent or N$12.1 billion of the loan book. Whereas, other loans and advances consist of overdrafts which equate to N$12 billion or 12.4 per cent of the total loans and instalment sales accounted for N$11.7 billion or 11.9 per cent of total loans. The remaining 8.3 per cent include personal loans, preference shares, resale agreements and credit cards (BON, 2019).

With regards to funding, bank funding increased by 18.9 per cent from N$4.9 billion in 2017, to N$5.8 billion in 2018. The increase in bank funding is mainly attributed by the increase in deposits growth and due to an increase in borrowings. Similarly, capital and reserves increased by 5.6 per cent from N$14.4 billion in 2017 to N$15.2 billion in 2018. Furthermore, Figure 2.1 below illustrates the composition of funding over the period 2014 to 2018. Although changes in funding occurred over the period under review, the composition of funding remained consistent over time (BON, 2019).

Figure 2.1 Composition of Funding

Source: BON (2019).

Addressing the capital adequacy of the banking sector, the total succeeding capital increased by 11.5 per cent from N$15.1 billion in 2017 to N$16.8 billion in 2018. The stated growth is slower, relative to the growth of 19.4 per cent recorded in 2017 (BON, 2019). The boost in capital is mainly due to the rise in tier 1 capital, namely, general reserves and retained earnings which increased by N$740.1 million and N$567.7 million, respectively. In addition, the tier 2 capital stems from current unaudited profits, subordinated-term debt issuances, general provisions, and revaluation reserves, which logged increases of N$114.0 million, N$103.1 million, N$57.7 million and N$26.4 million, respectively (BON, 2019). Whereas the asset quality of the banking industry weakened, primarily due to the monotonous growth in the domestic economy. The weakening in non-performing loans and overdue loans persevered, notwithstanding the inhibited appetite for credit by consumers and a low interest rate environment (BON, 2019). The non-performing loans increased by 52.8 per cent from N$2.3billion in 2017 to N$3.5billion in 2018. All loan product classifications were signified in the upsurge in non-performing loans. The key indicator of the asset quality; the non-performing loans as a percentage of the total loan book increased from 2.5 per cent in 2017 to 3.6 per cent in 2018. Although, this is the highest figure recorded over the past five years, it remains within the benchmark of 4 per cent (BON, 2019).

2.3 Theoretical Framework

From the evidence in the literature analysed above, there is no clear consensus reached on the direction of causality between banking development and economic growth as economists have two different views regarding the direction of causality. The two separate views are driven by the two theories which explain the direction of causality between banking development and

economic growth. The theories are the supply-leading theory, the demand-following theory and the Patrick's Stage of Development Hypothesis.

2.3.1 Supply-leading Hypothesis

Schumpeter (1911) pioneered the supply-leading theory, which hypothesize that an effective and efficient financial sector is a prerequisite for economic growth. The supply-leading hypothesis suggests that financial development encourages and stimulates economic growth. The supply-leading hypothesis postulates that progress associated with money is the key determinant of banking development. According to Schumpeter, banking development stimulates economic progression. Thus, when banks extend credit, they create opportunities of development in the real sector, however government involvement would have to be limited in order to restrict exclusive control over social and economic processes (Stolbov, 2013). Chow, Vieito and Wong (2019) support the model and state that the theory has two main functions; to relocate resources from the low-growth sectors to the high-growth sectors and to encourage an innovative and commercial reaction in these high-growth sectors.

2.3.2 Demand-following Hypothesis

The demand-following theory was led by Robinson (1952), which posits that financial development follows economic growth. This implies that economic growth Granger causes banking development. Advocates of the demand-following theory; Calderon and Liu, (2003) and Chow *et al.* (2019) opine that banking development is a reaction to the inordinate demand for financial services as the economy grows and that the productive utilization of the economy drives financial development, therefore deepening the financial services sector.

2.3.3 Patrick's Stage-of-Development Hypothesis

Patrick's stage-of-development hypothesis encompasses both the supply-leading hypothesis and the demand-following hypothesis (Patrick, 1966). Patrick (1966) argued that the nexus concerning banking development and economic growth may diverge over time. In the first instance banking development would lead economic growth during the initial stage, on the other hand as real growth occurs, this association tends to be of lower significance, therefore growth tends to induce the demand for superior banking development. Proponents of the theory suggest that, as banking development and economic growth advance, the supply-leading properties of banking development weaken progressively over time and are in due course subjugated by demand-following development (Davis III, 2017; Al-Naif, 2012).

2.4 Empirical Literature

There is consensus in literature to the effect that the nexus between banking development and economic development is divided in the following hypotheses; the supply-leading hypothesis, the demand-following hypothesis, a bi-directional nexus or no relationship amongst the variables (Okello *et al.,* 2015). The direction of causality appears to be country specific and based on the banking development indicators applied (Samargandi, Fidrmuc & Ghosh, 2015). The mixed results are also linked to the different roles played by the financial institutions in the financial sector, therefore impact economic growth differently. Moreover, the type of proxies utilised to analyse financial development and economic growth appear to determine the direction of causality (Kar & Pentecost, 2000) and it is therefore linked to the mixed results. Similarly, the mixed results are interrelated to the different banking supervision and regulation practiced across the world (Baliamoune-Lutz, 2008). In this section of literature, studies are classified into three main themes, based on directions of causality; studies on the supply-leading hypothesis, studies on the demand-following hypothesis and studies on the feedback hypothesis, according to Chiwira *et al.* (2016).

The studies that support the supply-leading hypothesis suggest that financial development causes economic growth (Korkmaz, 2015; Nyasha & Odhiambo, 2015b; Okello *et al*., 2015; Karimo & Ogbonna, 2017; Asteriou & Spanos, 2019; Sheefeni, 2019). Okello *et al*. (2015) apply the VECM and Granger causality approaches to investigate the causality between banking development and economic growth in Rwanda, employing quarterly time series data from 2000 to 2015. The results of their analysis indicate that banking development Granger causes economic growth. They conclude that, through the mobilization of savings and affordable lending rates, the banking sector provides credit to private enterprises, which encourages economic proliferation (Okello *et al*., 2015).

In support of the supply-leading hypothesis, Nyasha and Odhiambo (2015b) similarly investigate the bank-based and the market-based association with economic growth in South Africa during the period 1980 to 2012 using the Autoregresive Distributed Lag (ARDL) bounds testing method. Contrary to Okello *et al*. (2015) who focus solely on the causality between banking development and economic growth, Nyasha and Odhiambo (2015b) further observe the comparative bearing between banking development and market driven financial development on economic growth. They discover a positive long run and short run association running between banking development and economic growth. However, they find no

association among market driven financial development and economic growth (Nyasha & Odhiambo, 2015b). They conclude that banking development leads the real sector in South Africa.

Similarly, Karimo and Ogbonna (2017) examine the nexus between financial deepening and economic growth in Nigeria over the period 1970 to 2013 engaging the Toda–Yamamoto augmented Granger causality test. The study uses bank-based and market-based measures as proxies for financial deepening. Whereas, private sector credit and the prime lending rate constitute the bank-based measures. The results lend support to the supply-leading hypothesis, implying causality runs from financial development to economic growth. The study suggests that policy efforts should focus on expanding credit extended to the private sector and to restore investor confidence in the stock market.

Within the realm of the Namibian context, Sheefeni (2019) employs the VECM and Granger causality approach on private sector credit, broad money supply and lending rates for purposes of examining the causality between banking development and economic growth, using quarterly data for the period 2000 to 2017 to scrutinise the relationship between banking and economic development. Results of the study indicate that both broad money supply and private sector credit Granger cause economic growth. The study suggests that, although credit extension to the private sector stimulates economic growth it is critical to monitor it as private sector credit informs the monetary policy decisions. Sheefeni (2019) concludes that private sector credit serves as a tool, augmenting the demand for goods and services and in return stimulates economic activity.

Studies on the demand-following hypothesis suggest that financial development is a reaction to the uneven demand for financial services as the economy grows and that, it is the productive utilization of the economy that drives financial development (Chow *et al.*, 2019). Key studies that support the demand-following hypothesis (Kar & Pentecost, 2000; Carby, *et al.,* 2012; Chisunga, 2015; Taivan & Nene, 2016; Ono, 2017) suggest that, it is economic growth that drives banking development. Carby *et al.* (2012) also employ the VECM/Vector Autoregression (VAR) models on broad money supply and private and public sector credit in Barbados over the period 1946 to 2011, to investigate the direction of causality between banking development and economic growth over the progression of development. The results show that causality runs from economic growth to banking development in the short run and bi-directional in the long. The study concludes that the results are indicative rather than

conclusive, due to the limitation on available measures of banking development and economic growth.

Chisunga (2015) examines the nexus between financial development and economic growth in Zimbabwe, over the period 1995 to 2008. The study applies the Granger causality approach to determine the direction of causality between private sector credit and economic growth. The study finds that economic growth Granger causes private sector credit. Consequently, Chisunga (2015), suggests that the Zimbabwean banks lend at reduced interest rates and introduce innovative products in order to entice a broader clientele and to stimulate the productive sector.

Similarly, Taivan and Nene (2016) survey the causality between banking development and economic growth in 10 Southern African Development Community (SADC) countries over the period 1994 to 2013. The study employs the VAR and Granger causality approach to determine the direction of causality between broad money supply, domestic credit and economic growth. The results suggest that when broad money and domestic credit are used to measure banking development, economic growth causes banking development for 50 per cent and 60 per cent of the sample, respectively. While banking development causes economic growth for 20 per cent and 30 per cent of the sample, when broad money supply and domestic credit are used to measure banking development, respectively. No evidence of causality for the remaining countries. The study concludes that countries that exhibit evidence of the demand-following hypothesis apply resources towards encouraging economic growth through conduits other than banking development, with the aim of cultivating their banking sector.

In support of the demand-following hypothesis, Ono (2017) examines the causal relationship between banking development and the economic growth of Russia over two periods, firstly from 1999 to 2008 and secondly from 2009 to 2014. The study employs the VAR and Toda-Yamamoto non-causality approach to determine the direction of causality between banking developments and economic growth. The study uses broad money supply and credit to the private sector and non-financial public sector as proxies for banking development. The results of the first period exhibit evidence that economic growth drives broad money supply and private sector credit, while the results of the second period indicate that economic growth drives private sector credit. The study thus suggests that Russia focuses on its financial system as a conduit for the encouragement of economic growth whilst simultaneously reducing reliance on natural resources.

The last set of literature based on the feedback hypothesis (Yucel, 2009; Obradović & Grbić, 2015; Taivan, 2016; Taivan, 2018; Wu, Huang, Chang, Chiou & Hsueh, 2020) argues that causality between banking development and economic growth is bidirectional. Obradović, and Grbić (2015) examine the relationship between banking development and economic growth in Serbia utilising quarterly data for the period 2004 to 2011. The study employs the Toda-Yamamoto causality in order to establish the direction causation between banking development and economic growth. Employing 4 proxies for banking development; bank deposit liabilities, private sector credit, household credit and non-financial private sector credit, the study finds evidence of a bidirectional relationship between non-financial private sector credit and economic growth. Thus, Obradović, and Grbić (2015) conclude that the banking sector in Serbia plays an important role in the country's economic growth.

Taivan (2016) investigates the nexus between financial development and economic growth in 16 countries over the period 1980 to 2010. The study rests on the usage of the Seemingly Unrelated Regression Error Correction Model (SURECM) Granger causality test on the broad base money supply and bank deposit liabilities as the proxies for banking development. Results of the SURECM Granger causality show bi-directional causality in ten countries; Bangladesh, China, India, Japan, Korea, Malaysia, Nepal, New Zealand, Pakistan and Sri Lanka. Whereas, the results indicate reverse causality in the remaining six countries, Australia, Indonesia, Papua New Guinea, Philippines, Singapore and Thailand. The countries referenced in the study have different income levels ranging from low income countries to high income countries, which suggests that the direction of causality is country specific and not income specific. The study concludes, by suggesting that well developed financial sectors may not be a prerequisite for higher growth rates.

Similarly, Wu *et al.* (2020) explore the nexus between financial development and economic growth in China, Japan and India. The study engages the bootstrap ARDL over the period 1960 to 2016 to establish the causality relationship between the variables. Wu et al. (2020) use private sector credit as the sole proxy for banking development. The results indicate a bi-directional relationship between private sector credit and economic growth for China, Japan and India. The study suggests that the Chinese government monitors the credit performance of state-owned banks and examines the process of financial resource allocation in order to improve financial adeptness and stimulate economic growth. For India, minimal governmental involvement is evidenced in the financial systems and further engagement in financial integration, in order to

encourage banking development. For Japan, the study suggests that policymakers should continue to devise the suitable policies that enable banking development, in order to nurture economic growth.

2.5 Conclusion

This chapter discusses the literature and theoretical framework of the causality between banking development and economic growth. There are three diverse views in literature. First, studies on the supply-leading hypothesis assert that financial development drives economic growth, therefore banking development is a prerequisite for economic growth. Second, the demand-following hypothesis argues that as the economy grows the demand for financial services increase, therefore banking development is led by economic growth. Lastly, studies on the feedback hypothesis posit that the banking sector is crucial for the progression of a country's economy, while economic growth is a prerequisite for financial deepening, simultaneously. Although there are contesting views on the causal relationship between economic growth and banking development, there is consensus in literature on the critical role of the financial sector in regards to economic growth and the imperatives inherent to the development of the banking sector in an attempt to promote economic growth.

Chapter 3

Research Methodology

3.1 Introduction

This chapter presents a description of data and methodology applied in this study to investigate the nexus between banking development and economic growth in Namibia. It discusses the econometric methodology engaged and presents the model specification. This study employs the VECM framework and the Granger causality methodology, following previous studies by Carby et al. (2012), Sunde (2013), Okello et al. (2015), Taivan (2018) and Sheefeni (2019).

3.2 Data Description

This empirical analysis, which examines the nexus between banking development and economic growth in Namibia, investigates the presence and direction of causality between the two variables. Economic growth is measured by real GDP per capita following Calderón and Liu (2003), Sunde (2013), Okello et al. (2015) and Ono (2017). Banking development is generally explained in terms of efficiency, depth, quantity and quality of financial intermediaries. This study engages the ratio of broad money to nominal GDP, following Calderón and Liu (2003) who advance the notion that it is the most common proxy used and that an increase in the ratio suggests better levels of liquidity. The second proxy for banking development is private sector credit to nominal GDP. Therefore, following Eita (2009) and Abu-Bader and Abu-Qarn (2006) who postulate that credit extended to the private sector has a greater impact in increasing investment and improving productivity, relative to credit extended to the public sector. The third proxy is the lending rate, thus following Sunde (2010) who found a unidirectional causality, from GDP to the lending rate.

To examine the causality of banking development on economic growth, this study further employs foreign direct investment to GDP as a control variable. The variable will control for possible influential properties, thus would reflect the real impact of banking development on economic growth. Foreign direct investment is a vital element for economic growth, particularly in a developing country such as Namibia. As an investment, foreign direct investment is the fluid component in GDP, which will be held constant in order to examine the relationship between the dependent variable and the dependent variables.

3.2.1 Data Source and Sample Period

The data used for this study consists of quantitative secondary data, which was sourced from the International Financial Statistics and the World Bank, for the period covering 1991 to 2018. The intention is to survey data for the period, post-independence, however there are some gaps, immediately after independence during 1990. The data encompasses all licenced commercial banks authorised to operate in Namibia. The data used for this study, include, real GDP per capita (RGDP) as a proxy for economic growth, whereas the three proxies for banking development are, broad money to nominal GDP (M2), private sector credit to nominal GDP (PSC), and lending interest rates (INTR). In addition, the study engages foreign direct investments to nominal GDP (FDI) as a control variable. The data used in this study is annual data due to the completeness and availability of the data and to circumvent the problem of heteroscedasticity, more commonly linked to high frequency data, relative to low frequency data, while maintaining sufficient observations to perform a consequential regression analysis. Statistical data for Namibia is a challenging find as the data before independence, 1990, is predominantly unavailable (Sunde, 2010). Table 3.1 provides a description of the variables employed in this study. The description of the variables is adopted from the International Financial Statistics and the World Bank.

Table 3.1 Description of Variables

Dependent Variable			
	Variable	**Description**	
1.	Real Gross Domestic Product per Capita (RGDP)	Gross Domestic Product divided by mid-year population. GDP at purchase prices is the total of gross value added by domestic producers plus product taxes, less subsidies excluded in the value of the products (World Bank, 2021).	
Independent Variables			
	Variable	**Description**	**Expected Sign**
2.	Private sector Credit to Nominal GDP (PSC)	Refers to financial resources provided to the private sector by banks that establish a claim for repayment (World Bank, 2021).	Positive
3.	Broad Money to Nominal GDP	Demand deposits excluding those of the central government, time savings, foreign currency deposits of resident sectors excluding those of the central government, bank and travellers checks and other securities such as certificates of deposit and commercial paper (World Bank, 2021).	Positive
4.	Interest Rate (INTR)	Average lending rate charged by commercial banks (World Bank, 2021).	Negative

5.	Foreign Direct Investments to Nominal GDP (FDI)	It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows in Namibia from foreign investors, and is divided by GDP (World Bank, 2021).	Positive

Source: Author's compilation

3.3.1 Empirical Model

The analysis of the relationship between banking development and economic development begins with the determination of a regression model. Against this background, the linear regression equation for the model among the variables, RGDP, M2, PSC, INTR and FDI is as follows:

$RGDP_t = f(M2_t, PSC_t, INTR_t, FDI_t)$ ……………………………………………………. (1)

Given the time series nature of the data available, the fundamental estimating equation in log-linear form, the econometric equation is given below. Transforming data to natural logarithms may theoretically yield an improvement in the results obtained from the estimation process relating to the receptiveness of RGDP to changes in the independent variables (Ogbokor & Samahiya, 2014).

$LNRGDP_t = \alpha + \beta_1 LNM2_t + \beta_2 LNPSC_t + \beta_3 LNINTR_t + \theta_1 LNFDI_t + \mathcal{E}_t$………………. (2)

Whereas,

RGDP	= Real gross domestic product per capita which represents economic growth,
M2	= Broad money to nominal GDP,
PSC	= Private sector credit to nominal GDP,
INTR	= Interest rate,
FDI	= Foreign direct investment to nominal GDP,
α	= is the constant or intercept,
β_1, β_2, β_3	= are the coefficients of the independent variables,
θ_1	= the coefficient of the control variable,
$\mathcal{E}_t$	= the error term of the model,

3.3.2 Estimation Approach

This section describes the research approach, design and philosophy based on the data selected for analysis in this study. In order to examine the relationship between banking development and economic growth a series of tests are performed, based on the econometric equation specified in (2) above. The model selection draws support from Andrei and Andrei (2015), who justify using the VECM. Firstly, the analysis tests for stationarity as the regression results from the VECM models as the Granger causality tests will be spurious if performed with non-stationary variables. Secondly, in the presence of unit roots, the analysis tests for integration to determine if the variables are integrated of the same order to perform the VECM. If the variables are stationary, the VAR is performed instead. Thirdly, the analysis applies the Granger causality test and the impulse responses tests. The Granger causality test is a test applied in order to ascertain whether one time series is expedient for forecasting another time series (Granger, 1969). The Granger causality test is a vigorous tool engaged to examine the causal relationship amongst the time series data. The central purpose of the impulse response function is to pronounce the development of a model's variables in response to a shock in one or more variables. Therefore, the impulse response function is an expedient tool in the analysis of policies (Ronayne, 2011). Fourthly, the autoregressive (AR) roots test is engaged to test for VECM stability condition. The VECM model enforces an ascertained number of unit roots, relative to the VAR model that has no unit root (Mongale & Monkwe, 2015). Finally, the residual serial auto-correlation test is performed in order to ascertain the model adequacy.

3.3.2.1 Testing for Unit Roots

The aim of the stationarity test is to establish the existence of unit roots in the data and to simplify the stationary status of the data (Binh, 2013). Further, Binh (2013), stated that the presence of stationarity in time series data shows that the series have a constant mean, constant variance and a constant covariance. Thereby implying that a significant nexus in the regression model exists. The study engages the Augmented Dickey Fuller (ADF) and the Phillips Peron (PP) models to survey the stationarity of the time series by testing for the presence of unit roots, through the estimation of the models.

The ADF test, corrects for higher order of auto correlation by adding the lagged differenced term on the right-hand side of the equation. In the above model X_{t-i} is added until no serial correlation in error term exists (Bihn, 2013). The hypotheses are:

H_0: $\delta = 0$

H_1: $\delta < 0$

The test aims to establish whether $\delta = 0$. The ADF test statistic is the t statistic for the dependent variable. Where the ADF statistical value is less than the critical value we then reject the null hypothesis that X_t has a unit root, and conclude that X_t is a stationary process (Binh, 2013).

The PP test corrects any serial auto-correlation and heteroscedasticity in the errors (ε_t), by directly adjusting the parameters. In the above models, ε_t is integrated of order zero, implying it is free from auto-correlation and heteroscedasticity (Binh, 2013). The hypotheses are:

H_0: $\delta = 0$

H_1: $\delta < 0$

According to Binh (2013) the PP test makes a correction to the t statistic of the coefficient from the AR(1) regression to account for the serial correlation in εt. Implying, the PP statistics are just modifications of the ADF t statistics that take into account the less restrictive nature of the error process. The asymptotic distribution of the PP t statistic is the same as the ADF t statistic and therefore the MacKinnon (1996) critical values are still applicable.

3.3.2.2 Lag Length Selection

According to Ivanov and Kilian (2005), for all intents and purposes it is widely accepted to select the lag-order based on a given measure in modelling the impulse response estimates. Conversely, other scholars apply more than one criteria to survey the sturdiness of the estimation results. Yet, no clear and general practice exists among practitioners. The determination of the lag length is required as the determination of co-integration is sensitive to the lag length (Ogbokor & Meyer, 2016; Chow *et al.,* 2019; Sheefeni, 2019). Following Sheefeni (2019), this study selects the lag-order that minimizes the information criterion, which is regarded as the general criteria for selecting the lag length.

3.3.2.3 Co-integration Test

Testing for co-integration is essential to determining whether there is a long run relationship among the variables and prevent spurious regression (Johansen, 1991). However, if the variables are stationary in levels, it implies no long-run relationship exists, therefore the co-integration test is not required and a VAR model would be appropriate (Engle & Granger, 1987). Conversely, for variables integrated of order one or integrated of order two, the VEC

model would be appropriate. The Johansen co-integration approach has been adopted in this study. Johansen (1991) has developed two ratio tests, the Trace test and Maximum Eigenvalue test to determine the number of co-integrating vectors. Whereas, the short-run and long-run relationship among variables can be separated and can be used to improve the long-run forecast accuracy by using co-integration (Gujarati, 2009). Further, theories advocate that selected subsets of variables ought to be linked to a long-run equilibrium relationship.

The Hypotheses are: H_0: There is no co-integration among the variables

H_1: There is co-integration among the variables

Decision Rule: Where the critical value is greater than the calculated value, we fail to reject the null hypothesis. In the presence of co-integration among the variables, the adjustment of the short-run to the long-run equilibrium is obtained through the Vector Error Correction model (VECM).

3.3.2.4 Vector Error Correction Model (VECM)

Where a number of series are found to be co-integrated this implies that they have common stochastic trends and have a long-run equilibrium. This long run equilibrium is due to the short term random shock effects. The short term adjustment process is therefore referred to as an Error Correction Process. The ECM apprehends the short term withdrawals from the long run equilibrium in the model. Therefore, the VECM is applied, conversely in the absence of co-integration among the variables the VECM is not required and consequently the Granger causality test follows. The general form of the VECM is given as;

$$\Delta Y_t = \alpha_1 + \alpha_2 ECT_{t-1} + \alpha_3 \Delta Y_{t-1} + \alpha_4 \Delta X_{t-1} + \varepsilon_t \quad (3)$$

The residual term ε_t, is independently and normally distributed with a zero mean and constant variance. Whereas, the error correction term represents the adjustment of the dependent variable towards its equilibrium level. The lag selection is based on the selection criterion such as the SBC (Binh, 2013). According to Narayan and Smyth (2008) the error-correction based causality test includes the lagged error-correction term derived from the co-integration equation. By including the lagged error-correction term, the long-run information lost through differencing is reintroduced in a statistical manner.

3.3.2.5 VEC Residual Serial Auto-correlation Test

Examining an econometric model for auto-correlation is a standard systematic tool. Therefore, a full comprehension of the asymptotic features of the standard tests for the case when some variables are co-integrated remains imperative (Brüggemann, Lütkepohl, & Saikkonen, 2006). The test belongs to the large sample tests known as Lagrange multiplier (LM) tests. The LM test may be engaged to test for higher order autoregressive moving average model (ARMA) errors and is appropriate whether there are lagged dependent variables or not. The null hypothesis of the LM test is that there is no serial correlation up to lag order φ where φ is a pre-specified integer.

3.3.2.6 The Granger Causality Test

The VECM Granger causality test indicates the direction of causality. According to Granger (1969) the VECM technique should be estimated rather than a vector autoregression (VAR) if variables in the model are co-integrated. Variable Y is said to Granger cause variable X if X can be better forecasted using past values of Y and X than by using historical values of only X. The Granger causality test may be engaged in a multivariate Granger-causality test with more than two variables, as more than one variable could affect the results. The general causality test as described by Granger (1969):

$$Y_t = \sum_{i=1}^{n} \alpha_i Y_{t-i} + \sum_{j=1}^{n} \beta_j X_{t-j} + \varepsilon_{1t} \quad (4)$$

$$X_t = \sum_{i=1}^{n} \lambda_i Y_{t-i} + \sum_{j=1}^{n} \delta_j X_{t-j} + \varepsilon_{2t} \quad (5)$$

3.3.2.7 Impulse Response Functions

In addition to the Granger causality test, the causal relations between variables are surveyed by engaging the impulse response functions. Impulse response functions provide the response of a variable when the system is shocked by a one-standard-deviation shock of another variable (Ronayne, 2011). Further, the impulse response function uses estimates from the VAR model. According to Ronayne (2011), the polynomial increase along with the horizon, and if the VAR overlaps with the data generating process, the procedure is optimal for all horizons. If not, it yields biased impulse response functions. Moreover, impulse response functions indicate whether the nexus between the variables are positive or negative and indicate the extent of the

relationship. The impulse response functions may engage any two methods of analysis; the Cholesky technique or the generalised impulse response function (GIRF) technique (Keating, 1992). This study will employ the generalised impulse response function method, as the Cholesky technique is sensitive to the ordering of variables. The GIRF advanced by Koop, Pesaran and Potter (1996), can be defined as follows;

$$GI_{\mathrm{x}}(n, \boldsymbol{\Psi}, \boldsymbol{\Upsilon}_{t-1}) = \boldsymbol{E}(\boldsymbol{X}_{t+n}|\varepsilon_t = \boldsymbol{\Psi}, \boldsymbol{\Upsilon}_{t-1}) - \boldsymbol{E}(\boldsymbol{X}_{t+n}|\boldsymbol{\Upsilon}_{t-1}) \quad (6)$$

Whereas, $GI_{\mathrm{x}}(n, \boldsymbol{\Psi}, \boldsymbol{\Upsilon}_{t-1}) = A_n\boldsymbol{\Psi}$, which is autonomous of $\boldsymbol{\Upsilon}_{t-1}$, yet is dependent on the composition of shocks of $\boldsymbol{\Psi}$. Therefor $\boldsymbol{\Psi}$ is fundamental to the components of the GIRF.

3.3.2.8 Forecast Error Variance Decomposition

In addition to the Granger causality tests and impulse response functions, the variance decomposition will be performed. The variance decomposition demonstrates the variation of one variable due to the shock in the other variable. Furthermore, the variance decomposition fragments the variation in an endogenous variable into the component shocks to the vector auto-regression.

Chapter 4

Research Findings and Discussion

4.1 Introduction

This chapter presents the research findings in line with the empirical model suggested in chapter three above. It further estimates the overall significance of the model and the significance of the individual variables. The research findings are discussed as follows. First, the unit root tests are performed on each variable, thereafter, testing for co-integration, followed by the VECM as well as the Granger Causality test for the variables. The chapter concludes with results from the impulse response functions, the variance decompositions, robustness test and residual tests.

4.3 Descriptive Statistics

This section provides a descriptive analysis of the variables utilized in this study. The descriptive statistics are beneficial for parametric and non-parametric tests and key in quantitative research. The results of the descriptive statistics are presented in Table 4.1 below. The table indicates that all variables are closely related to the measures of central tendency, the mean and the median, as indicated by the small standard deviation of each variable.

The measures of normality, the skewness indicate that the variables RGDP, M2, INTR and FDI have normal skewness with symmetric distribution around the mean, as all values are near zero. In addition, kurtosis indicate that the variables are platykurtic as the values are less than three, which implies that the variables have more observations that are lower than the sample mean. Whereas, the table shows that PSC has negative skewness with a long left tail, which implies that the observations are mainly comprised of values lower than the sample mean. In addition, the kurtosis indicator shows that PSC is leptokurtic as the values are more than three, which implies that the variable has more observations that are higher than the sample mean.

The probability values of the Jarque-Bera test statistic for RGDP, M2, INTR and FDI are greater than 0.05, therefore we cannot reject the null hypotheses and conclude that the variables have a normal distribution. However, the probability value of the Jarque-Bera test statistic for PSC is less than 0.05, therefore we reject the null hypothesis and conclude that the variable is not normally distributed.

Table 4.1 Descriptive Statistics

	RGDP	PSC	M2	INTR	FDI
Mean	34978.77	44.41799	44.44180	13.87129	4.658058
Median	34439.78	46.81055	40.91108	13.31042	3.683051
Maximum	46944.21	52.51848	64.04907	23.36333	10.91159
Minimum	26819.12	19.36045	23.29525	8.289167	1.263546
Std. Dev.	7044.885	7.122197	10.69536	4.493608	2.679258
Skewness	0.342510	-1.720097	0.288662	0.463145	0.668049
Kurtosis	1.642985	6.610802	2.260828	1.922290	2.406589
Jarque-Bera	2.695868	29.01831	1.026292	2.356049	2.493512
Probability	0.259776	0.000000	0.598609	0.307886	0.287436
Sum	979405.6	1243.704	1244.370	388.3961	130.4256
Sum Sq. Dev.	1.34E+09	1369.593	3088.547	545.1979	193.8175
Observations	28	28	28	28	28

Note: RGDP= Real Gross Domestic Product Per Capita; M2= Broad Money to Nominal GDP; PSC= Private Sector Credit to Nominal GDP; INTR= Interest Rate; FDI= Foreign Direct Investment to Nominal GDP. Source: Author's compilation based on E-views results. * Dependent variable. **Independent Variables.

4.3 Unit Roots Tests

Table 4.2 below shows results of the ADF and PP Tests employed in order to determine the order of integration of the times series. The ADF and PP tests established that LNRGDP is non-stationary at level as the ADF and PP test statistics are more than the critical values and the p-values are more than 5 per cent. Hence, the null hypothesis cannot be rejected as the series has at least one unit root. After first differencing LNRGDP became stationary at the 5 per cent level of significance. The results indicated that the ADF and the PP test statistics are less than the critical values and the p-values are less than 5 per cent. Hence, the null hypothesis is rejected and it is concluded that LNRGDP is integrated of order one.

Similarly, the ADF and PP tests established that LNM2 is non-stationary at level as the ADF and PP test statistics are more than the critical values and the p-values are more than 5 per cent. Hence, the null hypothesis cannot be rejected as the series has at least one unit root. After first differencing LNM2 became stationary at the 5 per cent level of significance. The results indicated that the ADF and the PP test statistics are less than the critical values and the p-values are less than 5 per cent. Hence, the null hypothesis is rejected and it is concluded that LNM2 is integrated of order one.

The ADF and PP tests established that the models LNPSC with an intercept and the models with a trend and intercept are stationary, as the ADF and PP test statistics are less than the critical values and the p-values are less than 5 per cent. While the models with no trend and no

intercept are non-stationary as the ADF and PP test statistics are more than the critical values and the p-values are more than 5 per cent. Hence, the null hypothesis cannot be rejected as the series has at least one unit root. After first differencing LNPSC became stationary at 5 per cent level of significance. The results indicated that the ADF test statistic and the PP test statistics are less than the critical values and the p-values are less than 5 per cent. Hence, the null hypothesis is rejected and it is concluded that LNPSC is integrated of order one.

The ADF and PP tests established that LNINTR is non-stationary at level as the ADF and PP test statistics are more than the critical values and the p-values are more than 5 per cent. Hence, the null hypothesis cannot be rejected as the series has at least one unit root. After first differencing LNINTR became stationary at the 5 per cent level of significance. The results indicated that the ADF test statistic and the PP test statistic are less than the critical values and the p-values are less than 5 per cent. Hence, the null hypothesis is rejected and it is concluded that LNINTR is integrated of order one.

Whereas, the ADF and PP tests established that the models for LNFDI with an intercept are stationary, as the ADF and PP test statistics are less than the critical values and the p-values are less than 5 per cent. While the models with a trend and intercept and the models with no trend and no intercept are non-stationary as the ADF and PP test statistics are more than the critical values and the p-values are more than 5 per cent. Hence, the null hypothesis cannot be rejected as the series has at least one unit root. After first differencing LNFDI became stationary at 5 per cent level of significance. The results indicated that the ADF test statistic and the PP test statistic are less than the critical values and the p-values are less than 5 per cent. Hence, the null hypothesis is rejected and it is concluded that LNFDI is integrated of order one.

Table 4.2 Unit Toot Test – ADF and PP

Variable			Augmented Dickey Fuller Test (ADF)		Phillips Perron Test (PP)		Order of Integration
			Levels	First Difference	Levels	First Difference	
LNRGDP	Intercept:	T-Statistic	-0.2605	-3.891430**	-0.3355	-4.006286**	I(1)
		P-Value	0.9186	0.0066	0.9068	0.0050	
		Critical Value:					
		1% Level	-3.6999	-3.7115	-3.6999	-3.7115	
		5% Level	-2.9763	-2.9810	-2.9763	-2.9810	
		10% Level	-2.6274	-2.6299	-2.6274	-2.6299	
	Trend and Intercept:	T-Statistic	-2.2407	-3.823953*	-2.0374	-3.954675**	
		P-Value	0.4485	0.0314	0.5556	0.0239	
		Critical Value:					
		1% Level	-4.3743	-4.3561	-4.3393	-4.3561	
		5% Level	-3.6032	-3.5950	-3.5875	-3.5950	
		10% Level	-3.2381	-3.2335	-3.2292	-3.2335	
	None:	T-Statistic	3.2770	-3.249718**	2.8661	-3.326958**	
		P-Value	0.9994	0.0022	0.9982	0.0018	
		Critical Value:					
		1% Level	-2.6534	-2.6569	-2.6534	-2.6569	
		5% Level	-1.9539	-1.9544	-1.9539	-1.9544	
		10% Level	-1.6096	-1.6093	-1.6096	-1.6093	
LNM2	Intercept:	T-Statistic	-2.6620	-5.224763**	-2.6551	-5.245621**	I(1)
		P-Value	0.0936	0.0003	0.0949	0.0002	
		Critical Value:					
		1% Level	-3.6999	-3.7115	-3.6999	-3.7115	
		5% Level	-2.9763	-2.9810	-2.9763	-2.9810	
		10% Level	-2.6274	-2.6299	-2.6274	-2.6299	
	Trend and Intercept:	T-Statistic	-2.7758	-5.206733**	-2.8729	-5.206733**	
		P-Value	0.2173	0.0015	0.1861	0.0015	
		Critical Value:					
		1% Level	-4.3393	-4.3561	-4.3393	-4.3561	
		5% Level	-3.5875	-3.5950	-3.5875	-3.5950	
		10% Level	-3.2292	-3.2335	-3.2292	-3.2335	
	None:	T-Statistic	1.4797	-5.042234**	1.4672	-5.067579**	
		P-Value	0.9619	0.0000	0.9610	0.0000	
		Critical Value:					
		1% Level	-2.6534	-2.6569	-2.6534	-2.6569	
		5% Level	-1.9539	-1.9544	-1.9539	-1.9544	
		10% Level	-1.6096	-1.6093	-1.6096	-1.6093	
LNPSC	Intercept:	T-Statistic	-8.684609**	-8.522567**	-6.741689**	-8.522567**	I(1)
		P-Value	0.0000	0.0000	0.0000	0.0000	
		Critical Value:					
		1% Level	-3.6999	-3.7115	-3.6999	-3.7115	
		5% Level	-2.9763	-2.9810	-2.9763	-2.9810	
		10% Level	-2.6274	-2.6299	-2.6274	-2.6299	
	Trend and Intercept:	T-Statistic	-10.71846**	-7.936932**	-9.514636**	-7.936932**	
		P-Value	0.0000	0.0000	0.0000	0.0000	
		Critical Value:					
		1% Level	-4.3393	-4.3561	-4.3393	-4.3561	
		5% Level	-3.5875	-3.5950	-3.5875	-3.5950	
		10% Level	-3.2292	-3.2335	-3.2292	-3.2335	
	None:	T-Statistic	1.4945	-8.690822**	1.2673	-8.690822**	
		P-Value	0.9630	0.0000	0.9438	0.0000	
		Critical Value:					
		1% Level	-2.6534	-2.6569	-2.6534	-2.6569	
		5% Level	-1.9539	-1.9544	-1.9539	-1.9544	
		10% Level	-1.6096	-1.6093	-1.6096	-1.6093	
LNINTR	Intercept:	T-Statistic	-1.6525	-3.635177**	-1.6525	-3.627352**	I(1)
		P-Value	0.4431	0.0119	0.4431	0.0121	
		Critical Value:					
		1% Level	-3.6999	-3.7115	-3.6999	-3.7115	
		5% Level	-2.9763	-2.9810	-2.9763	-2.9810	

		10% Level	-2.6274	-2.6299	-2.6274	-2.6299	
	Trend and Intercept:	T-Statistic	-3.0925	-4.133241**	-2.1074	-3.585769**	
		P-Value	0.1287	0.0174	0.5189	0.0500	
		Critical Value:					
		1% Level	-4.3561	-4.3943	-4.3393	-4.3561	
		5% Level	-3.5950	-3.6122	-3.5875	-3.5950	
		10% Level	-3.2335	-3.2431	-3.2292	-3.2335	
	None:	T-Statistic	-1.7959	-3.579624**	-1.7959	-3.603106**	
		P-Value	0.0694	0.0009	0.0694	0.0009	
		Critical Value:					
		1% Level	-2.6534	-2.6569	-2.6534	-2.6569	
		5% Level	-1.9539	-1.9544	-1.9539	-1.9544	
		10% Level	-1.6096	-1.6093	-1.6096	-1.6093	
LNFDI	Intercept:	T-Statistic	-2.997093**	-5.599397**	-2.976250**	-7.230010**	I(1)
		P-Value	0.0479	0.0001	0.0050	0.0000	
		Critical Value:					
		1% Level	-3.6999	-3.7115	-3.6999	-3.7115	
		5% Level	-2.9763	-2.9810	-2.9763	-2.9810	
		10% Level	-2.6274	-2.6299	-2.6274	-2.6299	
	Trend and Intercept:	T-Statistic	-2.9223	-4.808404**	-2.8995	-10.22598**	
		P-Value	0.1715	0.0041	0.1781	0.0000	
		Critical Value:					
		1% Level	-4.3393	-4.3943	-4.3393	-4.3561	
		5% Level	-3.5875	-3.6122	-3.5875	-3.5950	
		10% Level	-3.2292	-3.2431	-3.2292	-3.2335	
	None:	T-Statistic	-1.3334	-5.698799**	-1.2217	-7.645481**	
		P-Value	0.1644	0.0000	0.1978	0.0000	
		Critical Value:					
		1% Level	-2.6534	-2.6569	-2.6534	-2.6569	
		5% Level	-1.9539	-1.9544	-1.9539	-1.9544	
		10% Level	-1.6096	-1.6093	-1.6096	-1.6093	

Note: RGDP= Real Gross Domestic Product Per Capita; M2= Broad Money to Nominal GDP; PSC= Private Sector Credit to Nominal GDP; INTR= Interest Rate; FDI= Foreign Direct Investment to Nominal GDP. ***, **, * represent 1%, 5% and 10% level of significance, respectively. Source: Author's compilation based on E-views results.

4.4 Lag Order Selection

The optimal lag length was selected, based on the lags that minimize the information criterion as shown in Table 4.3 below. The determination of the lag order is recommended, as it is a prerequisite for the co-integration test, in which the calculation of the F-statistic is highly sensitive to lag length. As can be seen in the results, the appropriate lag length for estimating the model is three, which is selected by the information criterion that minimizes the Akaike Information Criterion (AIC), Hannan-Quin Information Criterion (HQ) and the final prediction error (FPE). Therefore, it is considered the most appropriate lag order for this study based on the sample size.

Table 4.3 Optimal Lag Length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	67.66745	NA	4.58e-09	-5.013396	-4.769621	-4.945783
1	153.9271	131.1147*	3.57e-11	-9.914168	-8.451517*	-9.508491
2	184.3772	34.10411	3.04e-11	-10.35018	-7.668649	-9.606435
3	232.9372	34.96323	1.09e-11*	-12.23498*	-8.334577	-11.15317*

* Denotes lag length selected by the criterion. Source: Author's compilation based on E-views results.

4.4 Co-Integration Test

The analysis proceeds with the co-integration test on the time series, by employing the Johansen Co-integration test, to test the presence of a long run relationship between the variables under review. Using a lag length of three, inferences are drawn from the trace test for joint hypothesis and the maximum eigenvalue test for hypothesis on individual values. The results are indicated in Table 4.4 and Table 4.5 and confirms the existence of a long run association amongst the variables of interest.

Table 4.4 Trace Test Results

Test	$H0$	$H1$	**Trace statistics**	**5% Critical Value**	**Probability**
1	r=0 *	r ≥0	114.0160	69.81889	0.0000
2	r ≤1 *	r≥1	73.39714	47.85613	0.0000
3	r≤2 *	r≥2	37.04298	29.79707	0.0061
4	r≤3	r≥3	13.66145	15.49471	0.0927
5	r≤4*	r≥4	5.640812	3.841466	0.0175

Trace test indicates 3 co-integrating equations at the 0.05 level. *Denotes rejection of the hypothesis at the 0.05 level. Source: Author's compilation.

Table 4.5 Maximum Eigenvalue Test Results

Test	$H0$	$H1$	Max-Eigen statistic	5% Critical Value	Probability
1	r=0 *	r ≥0	40.61882	33.87687	0.0068
2	r ≤1 *	r≥1	36.35416	27.58434	0.0029
3	r≤2 *	r≥2	23.38153	21.13162	0.0237
4	r≤3	r≥3	8.020638	14.26460	0.3766
5	r≤4 *	r≥4	5.640812	3.841466	0.0175

Max-eigenvalue indicates 3 co-integrating equations at the 0.05 level. *Denotes rejection of the hypothesis at the 0.05 level. Source: Author's compilation.

The results of the trace test and the maximum eigenvalue test indicate that three co-integrating equations at the 5 per cent critical level. This implies that the null hypotheses are rejected and it is concluded that there is co-integration among the variables for all tests, excluding the fourth test. The fourth test performed, indicated that the critical value of 14.26460 is greater than the max eigenvalue of 8.020638. Hence, the null hypothesis of co-integration among the variables cannot be rejected. In the existence of co-integration among the variables, the adjustment of the short-run to the long-run equilibrium is obtained through the VECM.

4.5 Vector Error Correction Model

The co-integrating equation or error correction term equation signifies the long-run relationship of the variables in the VECM. Although the Johansen Co-integration test identified three co-integrating equations, the interest in this study is to examine the behaviour of banking development on economic growth. Therefore, the first equation is the most adequate (Johansen & Juselius, 1990). Thus, following Obayelu and Salau (2010) and Ikudayisi and Salman (2014). The three co-integrating equations bring the economy to the equilibrium autonomously, whereas a shock to one variable is conveyed to the other variables, when the new equilibrium state is found. Table 4.6 shows the synopsis of the long run association based on the co-integrating equation as indicated by the Max-eigenvalue Test and the Trace Test.

Table 4.6 VECM Long Run

Dependent Variable: LNRGDP(-1)				
Explanatory Variable	**Coefficient**	**Standard Error**	**T-Statistic**	**P-Values**
LNPSC(-1)	2.366123	0.49123	0.040958	0.969292
LNM2(-1)	0.294931	0.16626	1.77386	0.150759
LNINTR(-1)	1.626374***	0.20895	7.78361	0.001469
LNFDI(-1)	0.329458***	0.05738	5.74146	0.004560
Constant	-25.21793	---	---	

Note: RGDP= Real Gross Domestic Product Per Capita; M2= Broad Money to Nominal GDP; PSC= Private Sector Credit to Nominal GDP; INTR= Interest Rate; FDI= Foreign Direct Investment to Nominal GDP. ***represent 1% level of significance. Source: Author's compilation based on E-views results.

The coefficients of the independent variables in the co-integrating equation are all positive, therefore a negative long-run association between the dependent variable and the explanatory variables exists, as the interpretation of the coefficients is done in reverse (Kenny, 2019).

The co-integrating equation indicates that a percentage increase in private sector credit is associated with a 2.37 per cent decrease in real GDP per capita, however the relationship between the variables is insignificant. The results do not support the Schumpeterian theory, which pronounces that private sector credit drives economic growth. The negative association between private sector credit and real GDP per capita is driven by the excessive increase in credit levels relative to GDP. The finding is consistent with other research conducted (Beck, Georgiadis & Straub, 2014; Law & Singh, 2014). These studies have excessive growth in credit to the private sector as a common factor, while the findings suggest that a rapid growth in the financial sector translates to negative economic growth, as the banking sector competes for scares resources with the rest of the economy.

Similarly, money supply has an insignificant inverse long-run association with real GDP per capita, as a percentage increase in money supply leads to a decrease of 0.29 per cent in real GDP per capita. The results are consistent with other studies that posit, money supply impedes economic growth (Gatawa, Abdulgafar & Olarinde, 2017; Adusei, 2013). The consistency in these studies is mainly driven by the Keynesian school of thought who argues that money supply is immaterial to stimulate economic growth.

Whereas, interest rates and foreign direct investments have significant inverse long-run associations with real GDP per capita. Therefore, a percentage increase in interest rates leads to a decrease of 1.63 per cent in real GDP per capita. The findings contest theoretical literature that posits that higher interest rates stimulate savings, which in turn increase available private sector credit and consequently increases investment that leads to economic growth (McKinnon, & Shaw,1973). However, the findings support the the neoclassical school of thought, that argues that lower interest rates promotes higher levels of investment which leads to economic growth. The results are consistent with other studies that also found a negative association between interest rates and economic growth (Olowofeso, Adeleke & Udoji, 2015; Habanabakize & Meyer, 2018). The similarities of the findings suggest that the private sector is sensitive to interest rates as the appetite for borrowing decreases as interest rates increases.

While a percentage increase in foreign direct investment results in a decrease of 0.33 per cent in real GDP per capita. The findings contest theoretical literature which pronounces that economic growth is associated with substantial inflows of foreign direct investment. The findings are supported by other studies that found an inverse association between foreign direct investment and economic growth (Simionescu, 2016; Abdallah & Abdullahi, 2013). The findings suggest that the negative association is driven by capital flowing to the home countries of the Multi-National Corporations, instead of ploughing it back to the host country.

Further, the coefficient of the error correction term represents the long run association among the variables, given that the sign is negative. Whereas, the probability value of the coefficient of the error correction term should be less than 5 per cent, in order to be significant. Thus, the coefficient of the error correction term in Table 4.7 represents an insignificant long run association. The insignificant association implies that the long-run relationship exists, however not significant to growth. Therefore, long-run causality among the variables does not exist. Based on the coefficient of the error correction term, LNRGDP adjusts at 4.01 per cent in the next year, towards the long run equilibrium. This implies, that the economy corrects for 4.01 per cent of the previous year's disequilibrium in the long run and that the full equilibrium could be achieved in the protracted twenty fifth year.

Table 4.7 VECM Short Run Association

Dependent Variable: LNRGDP				
	Coefficient	**Standard Errors**	**T-Statistics**	**P-Values**
D(LNRGDP(-1))	0.3289*	0.1766	1.8624	0.0853
D(LNRGDP(-2))	0.2621	0.2186	1.1990	0.2519
D(LNPSC(-1))	-0.0260	0.1129	-0.2304	0.8214
D(LNPSC(-2))	-0.1089	0.0704	-1.5472	0.1458
D(LNM2(-1))	0.1772**	0.0803	2.2066	0.0459
D(LNM2(-2))	-0.0671	0.0675	-0.9940	0.3384
D(LNINTR(-1))	0.1066	0.0835	1.2764	0.2241
D(LNINTR(-2))	-0.2022**	0.0799	-2.5316	0.0250
D(LNFDI(-1))	-0.0133	0.0118	-1.1299	0.2789
D(LNFDI(-2))	-0.0007	0.0093	-0.0756	0.9409
Constant	0.0063	0.0076	0.8369	0.4177
ECT1	-0.0401	0.0459	-0.8733	0.3983
R-squared	0.6592			
Adj. R-squared	0.3709			
F-statistic	2.2862			

Note: RGDP= Real Gross Domestic Product Per Capita; M2= Broad Money to Nominal GDP; PSC= Private Sector Credit to Nominal GDP; INTR= Interest Rate; FDI= Foreign Direct Investment to Nominal GDP. ** and * denotes significance at the 5% and 10% levels respectively. Source: Author's compilation based on E-views.

The coefficients of the lagged variables are used to ascertain the presence of a short run association amongst the variables based on the VECM results. In addition, the results of the Wald test as per Table 4.8 show that there are two short run associations emanating from money supply and interest rates to real GDP per capita, which is consistent with the results of the VECM output in Table 4.7.

Table 4.8 Wald Test Short Run Association

Variables	Chi-square Statistic	Probability
LNPSC	2.501067	0.3186
LNM2	8.172620**	0.0168
LNINTR	8.499970**	0.0143
LNFDI	1.649966	0.4382

Note: RGDP= Real Gross Domestic Product Per Capita; M2= Broad Money to Nominal GDP; PSC= Private Sector Credit to Nominal GDP; INTR= Interest Rate; FDI= Foreign Direct Investment to Nominal GDP. ** denotes rejection of the hypothesis at the 0.05 level. Source: Author's compilation based on E-views.

Moreover, the standard errors of all variables are all less than one, thus it can be concluded that the model is performing satisfactorily. The explanatory variables are all significant in explaining the dependent variable. In addition, the coefficient of determination (R^2) indicates that 65.92 per cent of the total variation in GDP is explained by the explanatory variables in the model. In the same light, the probability value of the F-statistic is significant, which indicates that the data is a good fit for the model. Following the estimation of the VECM model, the analysis performs the Autocorrelation test in order to establish whether the model estimated is fit for the data.

4.7 VEC Residual Serial Auto-correlation

Results of the residual test shown in Table 4.9 render the VECM model estimated free from autocorrelation. This is evidenced by the VEC residual serial auto-correlation test, which has a probability value greater than 5 per cent. This is indicative that the sample size is sufficient and that sufficient lags have been included.

Table 4.9 Residual Auto-correlation LM-test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.395451	Prob. F	0.7591
Obs*R-squared	2.651339	Prob. Chi-Square	0.4486

Source: Author's compilation based on E-views results.

4.8 Granger Causality Test

After estimating the VECM model, it is critical to establish possible causality amongst the variables being analysed. The analysis applies the Granger Causality test to complement the model estimation by establishing possible causality and direction of such causality between the variables. Results of the Granger Causality test, conducted are summarised in Table 4.10 below.

Table 4.10 Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistic	Prob.
LNM2 does not Granger Cause LNRGDP	25	0.98116	0.4236
LNRGDP does not Granger Cause LNM2		1.60058	0.2242
LNPSC does not Granger Cause LNRGDP	25	0.84018	0.4895
LNRGDP does not Granger Cause LNPSC		3.76471	0.0294**
LNINTR does not Granger Cause LNRGDP	25	3.45100	0.0386**
LNRGDP does not Granger Cause LNINTR		0.68760	0.5713
LNFDI does not Granger Cause LNRGDP	25	1.46503	0.2575
LNRGDP does not Granger Cause LNFDI		1.46218	0.2582
LNPSC does not Granger Cause LNM2	25	0.55033	0.6544
LNM2 does not Granger Cause LNPSC		0.31781	0.8123
LNINTR does not Granger Cause LNM2	25	1.07071	0.3863
LNM2 does not Granger Cause LNINTR		0.61494	0.6142
LNFDI does not Granger Cause LNM2	25	1.15639	0.3536
LNM2 does not Granger Cause LNFDI		2.11940	0.1334
LNINTR does not Granger Cause LNPSC	25	5.40041	0.0079***
LNPSC does not Granger Cause LNINTR		0.52689	0.6694
LNFDI does not Granger Cause LNPSC	25	2.17030	0.1269
LNPSC does not Granger Cause LNFDI		0.20008	0.8950
LNFDI does not Granger Cause LNINTR	25	1.13111	0.3630
LNINTR does not Granger Cause LNFDI		1.14203	0.3589

Note: RGDP= Real Gross Domestic Product Per Capita; M2= Broad Money to Nominal GDP; PSC= Private Sector Credit to Nominal GDP; INTR= Interest Rate; FDI= Foreign Direct Investment to Nominal GDP. *** and ** denotes rejection of the null hypothesis at 1% and 5% respectively. Source: Author's compilation based on E-views results.

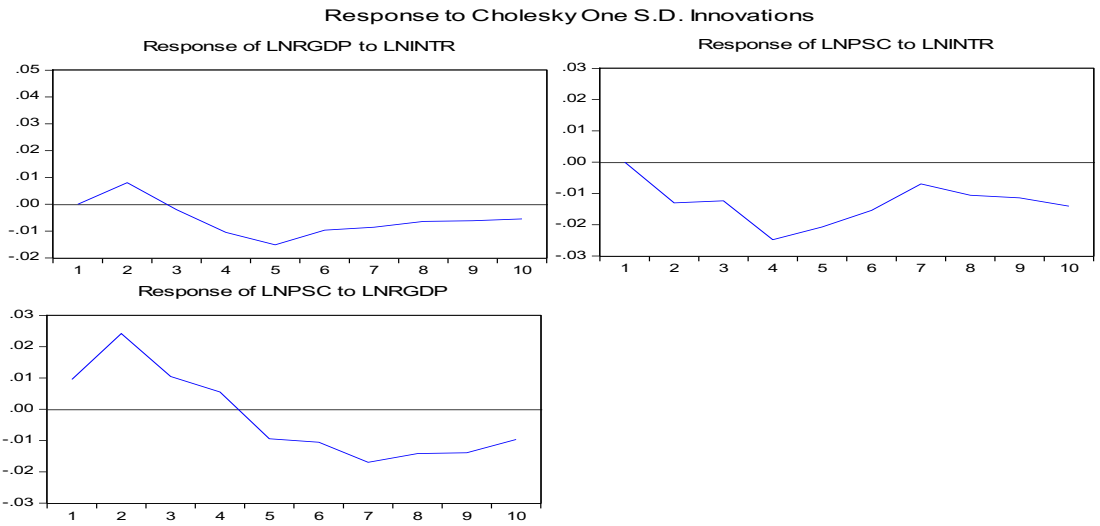
The results indicate a unidirectional causality running from LNRGDP and LNPSC, which is consistent with the findings of Eita (2009). However, the results are different from Sunde (2010) who suggests unidirectional causality, running from private sector credit to economic growth. In addition, the causality test showed that lags of LNINTR Granger causes LNPSC, which is consistent with the neoclassical theory of interest rate, which pronounces that interest rates are determined by the demand and the supply of loanable funds. Moreover, lags of

LNINTR Granger causes LNRGDP. Based on the findings there is no clear direction of causality running from banking development to economic growth or from economic growth to banking. In the next section, the impulse response functions will establish whether the causal relationship between variables is positive or negative and the extent of these relationships.

4.9 Impulse Response Functions

To complement the Causality and VECM estimations, the study further applies the IRF to examine the impact of the associations between variables. The results of the impulse response functions are depicted in Figure 4.1 below.

Figure 4.1 Impulse Response Function



Source: E-views results.

The chart exhibiting the response of RGDP to INTR, depicts an overall negative association between RGDP and INTR. The chart shows that after the one standard deviation shock to INTR, the RGDP increased from the first period to the second period. After which a decrease from period two up to five years after the shock is evident. From the fifth year RGDP became more stable up to 10 years after the shock, with a consistent increase evident. The results of the former and latter impulse response functions are consistent with Olowofeso *et al*., (2015), whose findings suggest that an increased lending rate impedes economic growth.

The chart indicating the response of PSC to one standard deviation shock to INTR illustrates a negative association between the variables under review. Further, the chart shows that after the shock to INTR, PSC decreases until the fourth period, where PSC increases to a subtle negative relationship during the consequent periods, until the seventh period. After which PSC stabilizes

with a subtle decline evident. The negative association between PSC and INTR holds true to the neoclassical theory of interest rate, which pronounces that interest rates are determined by the demand and the supply of loanable funds. On the basis of this premise, it is suggested that the BON engages expansionary monetary policies, in order to curb the lending rate in an attempt to promote PSC and RGDP.

The chart indicating the response of PSC to one standard deviation shock to RGDP illustrates a positive relationship between the variables under review, until the fourth period. Whereas, PSC increase during the first two periods, after which a downward trajectory is evident until the seventh period. Further, the chart shows the negative association from the fourth period until the tenth period, with a recovery of the downward trajectory evident in the seventh period. The extent of the relationship may indicate that PSC is not the main source to support economic growth.

4.10 Variance Decomposition

Lastly, the analysis performs the variance decomposition of the forecast error provides the percentage variation in each variable that is attributed to shocks by other variables in the model. The variance decomposition is performed to determine the degree of variability in one variable due to the shock in other variables in the system and to establish which of the independent variables has the most influence in explaining the variability in the dependent variables over time. The results are exhibited in Table 4.11 below.

Table 4.11 Variance Decomposition

Variance Decomposition of ΔLNRGDP					
Period	ΔLNRGDP	ΔLNPSC	ΔLNPM2	ΔLNINTR	ΔLNFDI
1	100.0000	0.000000	0.000000	0.000000	0.000000
2	88.01444	1.393086	1.967361	4.212252	4.412862
3	91.88487	0.916685	1.504738	2.148609	3.545100
4	91.94277	0.761002	0.980089	3.549115	2.767022
5	90.81419	0.563359	0.790283	5.449208	2.382961
6	91.09303	0.495867	0.624843	5.283234	2.503028
7	91.59228	0.496224	0.536600	5.090189	2.284705
8	92.12625	0.502878	0.473510	4.793575	2.103784
9	92.55325	0.446221	0.558094	4.452741	1.989694
10	92.82077	0.456331	0.648454	4.107140	1.967308

Note: RGDP= Real Gross Domestic Product Per Capita; PSC= Private Sector Credit to Nominal GDP; M2= Broad Money to Nominal GDP; INTR= Interest Rate; FDI= Foreign Direct Investment to Nominal GDP. Source: Author's compilation based on E-views results.

In the short run, the variation in the dependent variable LNRGDP is mainly explained by the shock to LNRGDP. The table illustrates that in the first, second and third period, 100 per cent, 88.01 per cent and 91.88 per cent of the variation in LNRGDP is explained by the shock in LNRDGP, respectively. Furthermore, no other variable appears to be significant to explaining the short run variation in LNRGDP. In the long run, the variability in LNRGDP is largely explained by shocks to LNRGDP, while the shocks to the independent appears to be insignificant in explaining the variability in LNRGDP.

Chapter 5

Conclusions and Policy Recommendations

5.1 Introduction

The mounting attention on the relationship between banking development and economic growth gave rise to the investigation of the study. The theoretical and empirical findings on the relationship between banking development and economic growth drives the conclusions of the study. Therefore, this chapter provides a summary of the research conclusions, policy recommendations and recommendations for future research.

5.2 Conclusions

The study surveyed the relationship between banking development and economic growth in Namibia. The main objectives of the study were to investigate the causal relationship between banking development and economic growth in Namibia. In addition, to examine the direction of causality between banking development and economic growth in Namibia.

The variables of interest used in the study included, RGDP, PSC, M2 and INTR. The Johansen Co-integration test confirmed the existence of a long run association amongst the variables. Whereas, the VECM analysis provided evidence of an insignificant long run association between the variables. On the basis of the error correction term the economy may reach full equilibrium in the twenty fifth year, which is considered relatively long, therefore reiterates the insignificant long run association. While the VECM analysis indicated that there are two short run associations running from M2 and INTR to RGDP. Subsequently, the Granger causality test indicated a unidirectional causality running from LNRGDP and LNPSC, a unidirectional causality running from LNINTR to LNPSC and a unidirectional causality running from LNINTR to LNRGDP. In order to establish whether the associations among the variables are negative or positive the impulse responses were estimated. The absence of a dominant supply-leading proposition suggests that foreign investments are not directly associated with the development of the Namibian banking sector.

Discernments from the impulse responses indicated an overall negative association between RGDP and INTR, therefore suggests that higher lending rates inhibit economic growth. Similarly, the impulse responses indicated a negative association between PSC and INTR,

which is consistent with the neoclassical theory of interest rate. Per the foregoing, it is suggested that the central bank engages expansionary monetary policies, in order to encourage PSC and stimulate economic growth. On the other hand, the impulse responses indicated a positive relationship between PSC and RGDP in the short run, while a negative association is evident from the fourth period until the tenth period. The nature of the relationship indicates that PSC is inefficient to support economic growth.

The study concluded, that based on the findings there is no significant long run relationship between the variables of interest, and no consistent direction of causality running from banking development to economic growth or from economic growth to banking. The findings are driven by two key characteristics of the Namibian banking sector. Firstly, the banking sector is dominated by the DSIBs who are protected from competition by the regulatory authority. The lack of competition stimulates inefficiencies and hampers growth in the banking sector. Secondly, the loans and advances of the banking sector are predominantly comprised of residential mortgage loans and commercial mortgage loans, while neglecting the rest of the economy and dampening economic development. Therefore, the study empirically suggests that Namibian banks are not key drivers of economic growth.

5.3 Policy Recommendations

On the basis of the results discussed and the conclusions, the study suggests that the Namibian government in conjunction with the banking sector are required to establish a robust banking system to stimulate sustainable economic growth. In order to solve the problem regarding the negative association between PSC and RGDP and between INTR and RGDP it is recommended that the central bank maintains a moderated interest rate. Moreover, it is recommended that the banking sector introduce and implement innovative loans and finance products.

The inefficient PSC of Namibian banks may be due to the country's current account deficit. The Namibian private sector neglects the value addition in the manufacturing process and focuses on low value added goods. Therefore, it is recommended that the private sector focus on value addition, which in turn creates more equity and creates a higher demand for PSC. Insights to the results suggest that the expansion of the banking sector should be supplemented with a proliferation in the movement of funds towards productive investment activities as opposed to consumer loans. Policymakers are advised to revisit policies which could change banks' lending appetite in order to take on more risk and include all sectors as oppose to

focussing on certain sectors, while practicing sound lending in an attempt to stimulate PSC. Similarly, it is advised that the banking sector diversify the heavily concentrated loan book, from residential mortgage loans and commercial mortgage loans to productive activities. Although, the global financial crises had a minimal impact on the banking sector, a prolonged financial crisis could have exposed the banking sector to higher risks, given the high levels of residential mortgage loans and commercial mortgage loans. In the same way that the global financial crises started due to the over exposure of banks in the United States of America to the mortgage market. In the same vein government is encouraged to avoid excessive borrowing from the banking sector as it may be crowding-out private investment. Therefore, the study recommends that the government avails of guarantees to banks, in order to reduce the collateral requirements, increase competition in the banking sector by way of licencing new banks, which may increase PSC and maintain lower lending rates.

5.3 Recommendations for Future Research

Based on the findings of the study, the researcher recommends that future studies focus on the relationship between private sector credit extended to the key drivers of the Namibian economy and economic growth. This would render a comprehensible indication on the direction and extent of the causality between private sector credit extended to the key drivers of the Namibian economy and economic growth. In addition, it would shed light on whether private sector credit extended, as a key role of commercial banks, would enable the Namibian economy to achieve its Vision 20130 goals.

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